

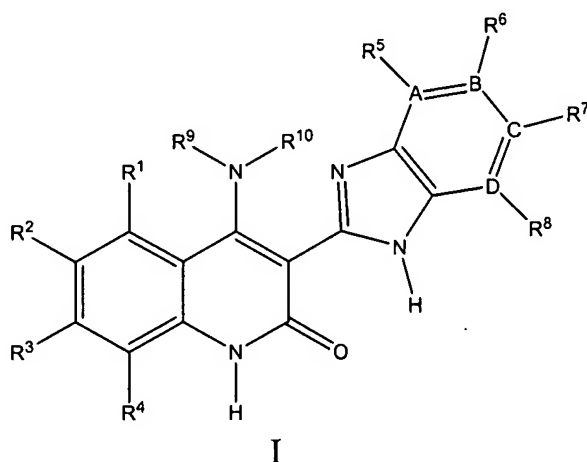
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-41. (Canceled)

42. (Currently Amended) A method of inhibiting a tyrosine kinase in a subject ~~or treating a biological condition mediated by the tyrosine kinase in a subject,~~ comprising: administering to the subject a compound of Structure I, a tautomer of the compound, a pharmaceutically acceptable salt of the compound, a pharmaceutically acceptable salt of the tautomer, or mixtures thereof, wherein the tyrosine kinase is selected from the group consisting of ~~cell cycle division 2 kinase,~~ Fyn, Lck, c-Kit, c-ABL, VEGFR3, PDGFR α , PDGFR β , FGFR3, FLT-3, p60src, and Tie-2 and Structure I has the following formula



wherein,

A, B, C, and D are independently selected from the group consisting of carbon and nitrogen;

R¹ is selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S-heterocyclyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocycliloxy groups, substituted and unsubstituted heterocyclylalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -N(heterocyclyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclylalkyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted -N(heterocyclylalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclylalkyl groups, substituted and unsubstituted -N(alkyl)-S(=O)₂-alkyl groups, substituted and unsubstituted -N(alkyl)-S(=O)₂-heterocyclyl groups, substituted and unsubstituted -N(alkyl)-S(=O)₂-heterocyclylalkyl groups, substituted and unsubstituted -C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-heterocyclyl groups, substituted and unsubstituted -C(=O)-heterocyclylalkyl groups, -C(=O)-NH₂, substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(heterocyclyl)₂ groups, substituted and unsubstituted

-C(=O)-N(H)(heterocyclalkyl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted
-C(=O)-N(heterocyclalkyl)₂ groups, -CO₂H, substituted and unsubstituted
-C(=O)-O-alkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclalkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclalkyl groups;

R² and R³ are independently selected from the group consisting of
-H, -F, -Cl, -Br, -I, -NO₂, -CN, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclalkyl groups, substituted and unsubstituted heterocyclalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S(=O)₂-O-alkyl groups, substituted and unsubstituted -S(=O)₂-alkyl groups, substituted and unsubstituted -S(=O)₂-heterocyclalkyl groups, -S(=O)₂-NH₂, substituted and unsubstituted -S(=O)₂-N(H)(alkyl) groups, substituted and unsubstituted -S(=O)₂-N(alkyl)₂ groups, substituted and unsubstituted -S(=O)-alkyl groups, substituted and unsubstituted -S(=O)-heterocyclalkyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted aryloxy groups, substituted and unsubstituted heterocyclalkoxy groups, substituted and unsubstituted heterocyclalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(aryl) groups, substituted and unsubstituted -N(alkyl)(aryl) groups, substituted and unsubstituted -N(aryl)₂ groups, substituted and unsubstituted -N(H)(aralkyl) groups, substituted and unsubstituted -N(alkyl)(aralkyl) groups, substituted and unsubstituted -N(aralkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclalkyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -N(heterocyclalkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclalkyl)

groups, substituted and unsubstituted -N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -N(heterocyclalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-alkyl groups, substituted and unsubstituted -N(H)-C(=O)-aryl groups, substituted and unsubstituted -N(alkyl)-C(=O)-aryl groups, substituted and unsubstituted -N(H)-C(=O)-aralkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-aralkyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocycl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocycl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-alkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-aryl, substituted and unsubstituted -N(H)-S(=O)₂-heterocycl groups, substituted and unsubstituted -C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-aryl, substituted and unsubstituted -C(=O)-aralkyl, substituted and unsubstituted -C(=O)-heterocycl groups, substituted and unsubstituted -C(=O)-heterocyclalkyl groups, -C(=O)-NH₂, substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(aryl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(aryl) groups, substituted and unsubstituted -C(=O)-N(aryl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(aralkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(aralkyl) groups, substituted and unsubstituted -C(=O)-N(aralkyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocycl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocycl) groups, substituted and unsubstituted -C(=O)-N(heterocycl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclalkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -

C(=O)-N(heterocyclalkyl)₂ groups, -CO₂H, substituted and unsubstituted -C(=O)-O-alkyl groups, C(=O)-O-aryl groups -C(=O)-O-aralkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclalkyl groups, and substituted and unsubstituted -C(=O)-O-heterocyclalkyl groups;

R⁴ is selected from the group consisting of -H and substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms;

R⁵ and R⁸ are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted heterocyclalkyl groups, substituted and unsubstituted heterocyclalkyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocyclalkoxy groups, substituted and unsubstituted heterocyclalkoxy groups; or R⁵ may be absent if A is nitrogen; or R⁸ may be absent if D is nitrogen;

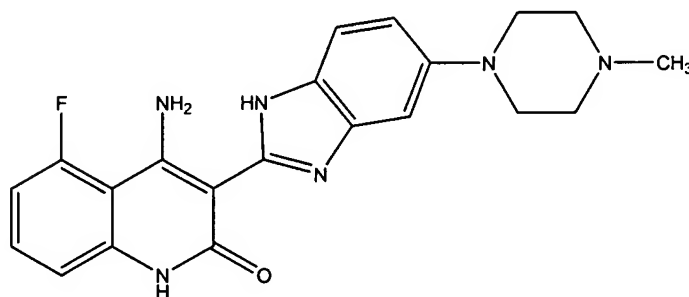
R⁶ and R⁷ are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted arylalkyl~~arylalkyl~~ groups, substituted and unsubstituted heterocyclalkyl groups, substituted and unsubstituted heterocyclalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S-heterocyclalkyl groups, -S(=O)₂-NH₂, substituted and unsubstituted -S(=O)₂-N(H)(alkyl) groups, substituted and unsubstituted -S(=O)₂-N(alkyl)₂ groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocyclalkoxy groups, substituted and unsubstituted heterocyclalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and

unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted
-N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -N(heterocyclyl)₂
groups, substituted and unsubstituted -N(H)(heterocyclylalkyl) groups, substituted
and unsubstituted -N(alkyl)(heterocyclylalkyl) groups, substituted and
unsubstituted -N(heterocyclylalkyl)₂ groups, substituted and unsubstituted
-N(H)-C(=O)-alkyl groups, substituted and unsubstituted
-N(H)-C(=O)-heterocyclyl groups, substituted and unsubstituted
-N(H)-C(=O)-heterocyclylalkyl groups, substituted and unsubstituted
-N(alkyl)-C(=O)-alkyl groups, substituted and unsubstituted
-N(alkyl)-C(=O)-heterocyclyl groups, substituted and unsubstituted
-N(alkyl)-C(=O)-heterocyclylalkyl, substituted and unsubstituted
-N(H)-S(=O)₂-alkyl groups, substituted and unsubstituted
-N(H)-S(=O)₂-heterocyclyl groups, substituted and unsubstituted
-N(H)-S(=O)₂-heterocyclylalkyl groups, substituted and unsubstituted
-C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-heterocyclyl groups,
substituted and unsubstituted -C(=O)-heterocyclylalkyl groups, -C(=O)-NH₂,
substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and
unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocyclyl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocyclyl) groups, substituted and unsubstituted
-C(=O)-N(heterocyclyl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocyclylalkyl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted
-C(=O)-N(heterocyclylalkyl)₂ groups, -CO₂H, substituted and unsubstituted
-C(=O)-O-alkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclyl
groups, and substituted and unsubstituted -C(=O)-O-heterocyclylalkyl groups; or
R⁶ is absent if B is nitrogen; or R⁷ is absent if C is nitrogen;

R⁹ is selected from the group consisting of -H, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbons, substituted and unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclalkyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocycloxy groups, -NH₂, and substituted and unsubstituted heterocyclaminoalkyl; and

R¹⁰ is -H.

43. (Original) The method of claim 42, wherein the compound has the following formula



44-51. (Canceled)

52. (Currently Amended) The method of claim 42 ~~any of claims 44, 46, 48, or 50~~, wherein the IC₅₀ value of the compound is less than or equal to 0.1 μM with respect to the tyrosine kinase.

53-68. (Canceled)

69. (New) The method of claim 42, wherein A, B, C, and D are all carbon.

70. (New) The method of claim 42, wherein one of A or D is nitrogen, and B and C are both carbon.

71. (New) The method of claim 42, wherein R⁹ is selected from 4-aminomethylbenzyl groups, benzimidazolyl groups, quinuclidinyl groups, piperidinyl groups, piperidinylalkyl groups, pyrrolidinyl groups, pyrrolidinylalkyl groups, N-alkylpyrrolidinylalkyl groups, imidazolylalkyl groups, tetrahydrofuranylalkyl groups, aminocyclohexyl groups, hydroxycyclohexyl groups, or 2,2-dimethyl-3-aminopropyl groups.

72. (New) The method of claim 42, wherein R⁹ is selected from monocyclic, bicyclic, and polycyclic saturated heterocyclyl groups.

73. (New) The method of claim 42, wherein R⁹ is -H.

74. (New) The method of claim 42, wherein R¹ is selected from -H, -F, -Cl, -Br, -I, substituted and unsubstituted straight and branched chain alkyl groups having from 1 to 8 carbon atoms, substituted and unsubstituted cycloalkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocycloxy groups, or substituted and unsubstituted heterocyclylalkoxy groups.

75. (New) The method of claim 42, wherein R¹ is selected from -H, -F, -Cl, substituted and unsubstituted straight or branched chain alkoxy, substituted and unsubstituted piperidinyl, substituted and unsubstituted morpholinyl, or substituted and unsubstituted piperazinyl.

76. (New) The method of claim 42, wherein R¹ is -F.

77. (New) The method of claim 42, wherein R² is selected from -H, -F, -Cl, -Br, -I, methyl, methoxy, or -CO₂H.

78. (New) The method of claim 42, wherein R³ is selected from -H, -F, -Cl, -Br, methoxy, and dimethylamino groups.

79. (New) The method of claim 42, wherein R⁴ is selected from -H or -CH₃.

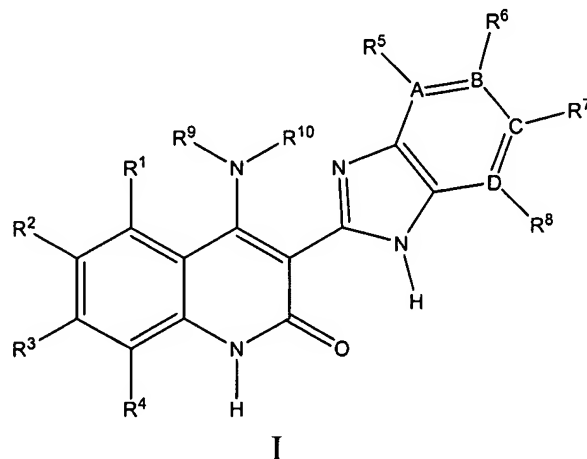
80. (New) The method of claim 42, wherein R⁵ and R⁸ are independently selected from -H, -F, -OH, or saturated heterocyclyl groups; or R⁵ is absent if A is nitrogen; or R⁸ is absent if D is nitrogen.

81. (New) The method of claim 42, wherein A and D are both carbon, R⁵ is -H, and R⁸ is -H.

82. (New) The method of claim 42, wherein R⁶ and R⁷ are independently selected from -H, -F, -Cl, -CN, substituted and unsubstituted straight and branched chain alkyl groups having from 1 to 8 carbon atoms, substituted and unsubstituted pyrrolidinyl groups, substituted and unsubstituted morpholinyl groups, substituted and unsubstituted piperazinyl groups, substituted and unsubstituted diazepinyl groups, substituted and unsubstituted triazolyl groups, substituted and unsubstituted thiomorpholine 1-oxide groups, substituted and unsubstituted pyridinylalkyl groups, substituted and unsubstituted -S(=O)₂-N(alkyl)₂ groups, -OH, substituted and unsubstituted straight and branched chain alkoxy groups, substituted and unsubstituted heterocycloxy groups, substituted and unsubstituted heterocyclalkoxy groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -N(H)(heterocyclalkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted -C(=O)-N(alkyl)(piperidinyl) groups, substituted and unsubstituted -C(=O)-(morpholin-4-yl) groups, or substituted and unsubstituted -C(=O)-(piperazin-1-yl) groups; or R⁶ is absent if B is nitrogen; or R⁷ is absent if C is nitrogen.

83. (New) A method of treating cancer mediated by a tyrosine kinase in a subject, comprising: administering to the subject an effective amount of a compound of Structure I, a

tautomer of the compound, a pharmaceutically acceptable salt of the compound, a pharmaceutically acceptable salt of the tautomer, or mixtures thereof, wherein the tyrosine kinase is selected from the group consisting of Fyn, Lck, c-Kit, c-ABL, VEGFR3, PDGFR α , PDGFR β , FGFR3, FLT-3, p60src, and Tie-2 and Structure I has the following formula



wherein,

A, B, C, and D are independently selected from the group consisting of carbon and nitrogen;

R¹ is selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S-heterocyclyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocyclyloxy groups, substituted and unsubstituted heterocyclylalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclyl) groups, substituted

and unsubstituted -N(heterocyclyl)₂ groups, substituted and unsubstituted
-N(H)(heterocyclylalkyl) groups, substituted and unsubstituted
-N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted
-N(heterocyclylalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl
groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclyl groups,
substituted and unsubstituted -N(H)-C(=O)-heterocyclylalkyl groups, substituted
and unsubstituted -N(alkyl)-S(=O)₂-alkyl groups, substituted and unsubstituted
-N(alkyl)-S(=O)₂-heterocyclyl groups, substituted and unsubstituted
-N(alkyl)-S(=O)₂-heterocyclylalkyl groups, substituted and unsubstituted
-C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-heterocyclyl groups,
substituted and unsubstituted -C(=O)-heterocyclylalkyl groups, -C(=O)-NH₂,
substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and
unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocyclyl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocyclyl) groups, substituted and unsubstituted
-C(=O)-N(heterocyclyl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocyclylalkyl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted
-C(=O)-N(heterocyclylalkyl)₂ groups, -CO₂H, substituted and unsubstituted
-C(=O)-O-alkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclyl
groups, and substituted and unsubstituted -C(=O)-O-heterocyclylalkyl groups;

R² and R³ are independently selected from the group consisting of
-H, -F, -Cl, -Br, -I, -NO₂, -CN, substituted and unsubstituted alkyl groups having
from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having
from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted
and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclyl
groups, substituted and unsubstituted heterocyclylalkyl groups, -SH, substituted
and unsubstituted -S-alkyl groups, substituted and unsubstituted -S(=O)₂-O-alkyl

groups, substituted and unsubstituted -S(=O)₂-alkyl groups, substituted and unsubstituted -S(=O)₂-heterocyclyl groups, -S(=O)₂-NH₂, substituted and unsubstituted -S(=O)₂-N(H)(alkyl) groups, substituted and unsubstituted -S(=O)₂-N(alkyl)₂ groups, substituted and unsubstituted -S(=O)-alkyl groups, substituted and unsubstituted -S(=O)-heterocyclyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted aryloxy groups, substituted and unsubstituted heterocycloxy groups, substituted and unsubstituted heterocyclalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(aryl) groups, substituted and unsubstituted -N(alkyl)(aryl) groups, substituted and unsubstituted -N(aryl)₂ groups, substituted and unsubstituted -N(H)(aralkyl) groups, substituted and unsubstituted -N(alkyl)(aralkyl) groups, substituted and unsubstituted -N(aralkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -N(heterocyclyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclalkyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -N(heterocyclalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-alkyl groups, substituted and unsubstituted -N(H)-C(=O)-aryl groups, substituted and unsubstituted -N(alkyl)-C(=O)-aryl groups, substituted and unsubstituted -N(H)-C(=O)-aralkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-aralkyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-alkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-aryl,

substituted and unsubstituted -N(H)-S(=O)₂-heterocyclyl groups, substituted and unsubstituted -C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-aryl, substituted and unsubstituted -C(=O)-aralkyl, substituted and unsubstituted -C(=O)-heterocyclyl groups, substituted and unsubstituted -C(=O)-heterocyclylalkyl groups, -C(=O)-NH₂, substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(aryl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(aryl) groups, substituted and unsubstituted -C(=O)-N(aryl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(aralkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(aralkyl) groups, substituted and unsubstituted -C(=O)-N(aralkyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(heterocyclyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclylalkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted -C(=O)-N(heterocyclylalkyl)₂ groups, -CO₂H, substituted and unsubstituted -C(=O)-O-alkyl groups, C(=O)-O-aryl groups -C(=O)-O-aralkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclyl groups, and substituted and unsubstituted -C(=O)-O-heterocyclylalkyl groups;

R⁴ is selected from the group consisting of -H and substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms;

R⁵ and R⁸ are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, -OH, substituted and

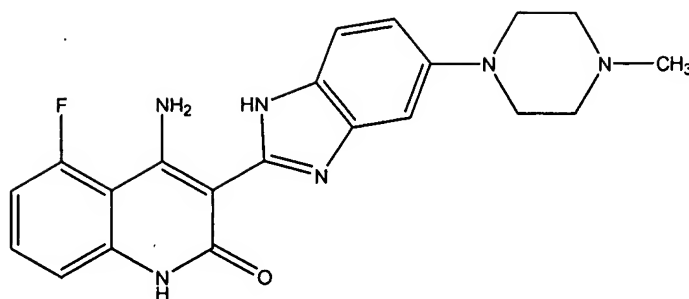
unsubstituted alkoxy groups, substituted and unsubstituted heterocycloxy groups, substituted and unsubstituted heterocyclalkoxy groups; or R⁵ may be absent if A is nitrogen; or R⁸ may be absent if D is nitrogen;

R⁶ and R⁷ are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted arylalkyl groups, substituted and unsubstituted heterocycl groups, substituted and unsubstituted heterocyclalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S-heterocycl groups, -S(=O)₂-NH₂, substituted and unsubstituted -S(=O)₂-N(H)(alkyl) groups, substituted and unsubstituted -S(=O)₂-N(alkyl)₂ groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocycloxy groups, substituted and unsubstituted heterocyclalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(heterocycl) groups, substituted and unsubstituted -N(alkyl)(heterocycl) groups, substituted and unsubstituted -N(heterocycl)₂ groups, substituted and unsubstituted -N(H)(heterocyclalkyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -N(heterocyclalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocycl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-alkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocycl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclalkyl, substituted and unsubstituted -N(H)-S(=O)₂-alkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-heterocycl groups, substituted and unsubstituted

-N(H)-S(=O)₂-heterocyclalkyl groups, substituted and unsubstituted
-C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-heterocycl groups,
substituted and unsubstituted -C(=O)-heterocyclalkyl groups, -C(=O)-NH₂,
substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and
unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocycl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocycl) groups, substituted and unsubstituted
-C(=O)-N(heterocycl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocyclalkyl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted
-C(=O)-N(heterocyclalkyl)₂ groups, -CO₂H, substituted and unsubstituted
-C(=O)-O-alkyl groups, substituted and unsubstituted -C(=O)-O-heterocycl
groups, and substituted and unsubstituted -C(=O)-O-heterocyclalkyl groups; or
R⁶ is absent if B is nitrogen; or R⁷ is absent if C is nitrogen;

R⁹ is selected from the group consisting of -H, substituted and
unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and
unsubstituted alkenyl groups having from 1 to 12 carbons, substituted and
unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted
and unsubstituted heterocycl groups, substituted and unsubstituted
heterocyclalkyl groups, -OH, substituted and unsubstituted alkoxy groups,
substituted and unsubstituted heterocycloxy groups, -NH₂, and substituted and
unsubstituted heterocyclaminoalkyl; and
R¹⁰ is -H.

84. (New) The method of claim 83, wherein the compound has the following
formula:



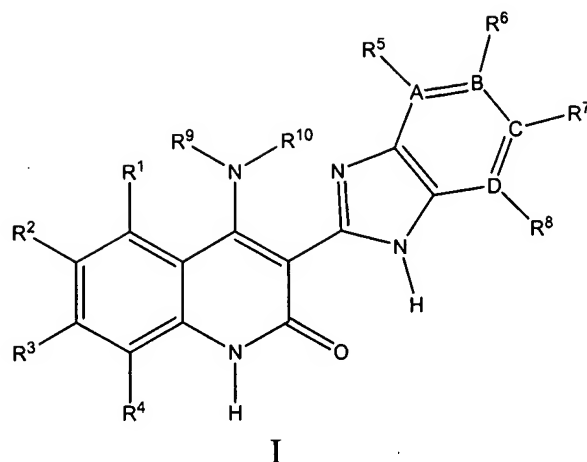
85. (New) The method of claim 83, wherein the subject is a human.

86. (New) The method of claim 83, wherein the cancer is mast cell leukemia, germ cell tumor, small-cell lung carcinoma, gastrointestinal stromal tumor, acute myelogenous leukemia, neuroblastoma, melanoma, ovarian carcinoma, breast carcinoma, lung cancer, colon cancer, prostate cancer, chronic myelogenous leukemia, or acute lymphoblastic leukemia.

87. (New) The method of claim 83, wherein the cancer is acute myelogenous leukemia, ovarian carcinoma, breast carcinoma, lung cancer, colon cancer, prostate cancer, chronic myelogenous leukemia.

88. (New) The method of claim 83, wherein the cancer is acute myelogenous leukemia.

89. (New) A method of treating cancer comprising: administering to a cancer patient an effective amount of a compound of Structure I, a tautomer of the compound, a pharmaceutically acceptable salt of the compound, a pharmaceutically acceptable salt of the tautomer, or mixtures thereof, wherein the cancer is selected from mast cell leukemia, germ cell tumor, small-cell lung carcinoma, gastrointestinal stromal tumor, acute myelogenous leukemia, neuroblastoma, melanoma, ovarian carcinoma, breast carcinoma, lung cancer, colon cancer, prostate cancer, chronic myelogenous leukemia, or acute lymphoblastic leukemia, and Structure I has the following formula:



wherein,

A, B, C, and D are independently selected from the group consisting of carbon and nitrogen;

R¹ is selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S-heterocyclyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocycloxy groups, substituted and unsubstituted heterocyclylalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -N(heterocyclyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclylalkyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted -N(heterocyclylalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl

groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(alkyl)-S(=O)₂-alkyl groups, substituted and unsubstituted -N(alkyl)-S(=O)₂-heterocyclyl groups, substituted and unsubstituted -N(alkyl)-S(=O)₂-heterocyclalkyl groups, substituted and unsubstituted -C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-heterocyclyl groups, substituted and unsubstituted -C(=O)-heterocyclalkyl groups, -C(=O)-NH₂, substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(heterocyclyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclalkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -C(=O)-N(heterocyclalkyl)₂ groups, -CO₂H, substituted and unsubstituted -C(=O)-O-alkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclyl groups, and substituted and unsubstituted -C(=O)-O-heterocyclalkyl groups;

R² and R³ are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, -NO₂, -CN, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S(=O)₂-O-alkyl groups, substituted and unsubstituted -S(=O)₂-alkyl groups, substituted and unsubstituted -S(=O)₂-heterocyclyl groups, -S(=O)₂-NH₂, substituted and unsubstituted -S(=O)₂-N(H)(alkyl) groups, substituted and unsubstituted -S(=O)₂-N(alkyl)₂ groups, substituted and unsubstituted -S(=O)-alkyl groups,

substituted and unsubstituted -S(=O)-heterocyclyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted aryloxy groups, substituted and unsubstituted heterocycloxy groups, substituted and unsubstituted heterocyclalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(aryl) groups, substituted and unsubstituted -N(alkyl)(aryl) groups, substituted and unsubstituted -N(aryl)₂ groups, substituted and unsubstituted -N(H)(aralkyl) groups, substituted and unsubstituted -N(alkyl)(aralkyl) groups, substituted and unsubstituted -N(aralkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -N(heterocyclyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclalkyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -N(heterocyclalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-alkyl groups, substituted and unsubstituted -N(H)-C(=O)-aryl groups, substituted and unsubstituted -N(alkyl)-C(=O)-aryl groups, substituted and unsubstituted -N(H)-C(=O)-aralkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-aralkyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclalkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-alkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-aryl, substituted and unsubstituted -N(H)-S(=O)₂-heterocyclyl groups, substituted and unsubstituted -C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-aryl, substituted and unsubstituted -C(=O)-aralkyl, substituted and unsubstituted -C(=O)-heterocyclyl groups, substituted and unsubstituted

-C(=O)-heterocyclalkyl groups, -C(=O)-NH₂, substituted and unsubstituted
-C(=O)-N(H)(alkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)₂
groups, substituted and unsubstituted -C(=O)-N(H)(aryl) groups, substituted and
unsubstituted -C(=O)-N(alkyl)(aryl) groups, substituted and unsubstituted
-C(=O)-N(aryl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(aralkyl)
groups, substituted and unsubstituted -C(=O)-N(alkyl)(aralkyl) groups, substituted
and unsubstituted -C(=O)-N(aralkyl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocycl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocycl) groups, substituted and unsubstituted
-C(=O)-N(heterocycl)₂ groups, substituted and unsubstituted
-C(=O)-N(H)(heterocyclalkyl) groups, substituted and unsubstituted
-C(=O)-N(alkyl)(heterocyclalkyl) groups, substituted and unsubstituted -
C(=O)-N(heterocyclalkyl)₂ groups, -CO₂H, substituted and unsubstituted
-C(=O)-O-alkyl groups, C(=O)-O-aryl groups -C(=O)-O-aralkyl groups,
substituted and unsubstituted -C(=O)-O-heterocycl groups, and substituted and
unsubstituted -C(=O)-O-heterocyclalkyl groups;

R⁴ is selected from the group consisting of -H and substituted and
unsubstituted alkyl groups having from 1 to 12 carbon atoms;

R⁵ and R⁸ are independently selected from the group consisting of
-H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having
from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having
from 1 to 12 carbon atoms, substituted and unsubstituted heterocycl groups,
substituted and unsubstituted heterocyclalkyl groups, -OH, substituted and
unsubstituted alkoxy groups, substituted and unsubstituted heterocycloxy
groups, substituted and unsubstituted heterocyclalkoxy groups; or R⁵ may be
absent if A is nitrogen; or R⁸ may be absent if D is nitrogen;

R^6 and R^7 are independently selected from the group consisting of -H, -F, -Cl, -Br, -I, -CN, -NO₂, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted aryl groups, substituted and unsubstituted arylalkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, -SH, substituted and unsubstituted -S-alkyl groups, substituted and unsubstituted -S-heterocyclyl groups, -S(=O)₂-NH₂, substituted and unsubstituted -S(=O)₂-N(H)(alkyl) groups, substituted and unsubstituted -S(=O)₂-N(alkyl)₂ groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocycloxy groups, substituted and unsubstituted heterocyclylalkoxy groups, -NH₂, substituted and unsubstituted -N(H)(alkyl) groups, substituted and unsubstituted -N(alkyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -N(heterocyclyl)₂ groups, substituted and unsubstituted -N(H)(heterocyclylalkyl) groups, substituted and unsubstituted -N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted -N(heterocyclylalkyl)₂ groups, substituted and unsubstituted -N(H)-C(=O)-alkyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(H)-C(=O)-heterocyclylalkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-alkyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclyl groups, substituted and unsubstituted -N(alkyl)-C(=O)-heterocyclylalkyl, substituted and unsubstituted -N(H)-S(=O)₂-alkyl groups, substituted and unsubstituted -N(H)-S(=O)₂-heterocyclyl groups, substituted and unsubstituted -N(H)-S(=O)₂-heterocyclylalkyl groups, substituted and unsubstituted -C(=O)-alkyl groups, substituted and unsubstituted -C(=O)-heterocyclyl groups, substituted and unsubstituted -C(=O)-heterocyclylalkyl groups, -C(=O)-NH₂,

substituted and unsubstituted -C(=O)-N(H)(alkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclyl) groups, substituted and unsubstituted -C(=O)-N(heterocyclyl)₂ groups, substituted and unsubstituted -C(=O)-N(H)(heterocyclylalkyl) groups, substituted and unsubstituted -C(=O)-N(alkyl)(heterocyclylalkyl) groups, substituted and unsubstituted -C(=O)-N(heterocyclylalkyl)₂ groups, -CO₂H, substituted and unsubstituted -C(=O)-O-alkyl groups, substituted and unsubstituted -C(=O)-O-heterocyclyl groups, and substituted and unsubstituted -C(=O)-O-heterocyclylalkyl groups; or R⁶ is absent if B is nitrogen; or R⁷ is absent if C is nitrogen;

R⁹ is selected from the group consisting of -H, substituted and unsubstituted alkyl groups having from 1 to 12 carbon atoms, substituted and unsubstituted alkenyl groups having from 1 to 12 carbons, substituted and unsubstituted aryl groups, substituted and unsubstituted aralkyl groups, substituted and unsubstituted heterocyclyl groups, substituted and unsubstituted heterocyclylalkyl groups, -OH, substituted and unsubstituted alkoxy groups, substituted and unsubstituted heterocycliloxy groups, -NH₂, and substituted and unsubstituted heterocyclylaminoalkyl; and R¹⁰ is -H.

90. (New) The method of claim 89, wherein the cancer is acute myelogenous leukemia, ovarian carcinoma, breast carcinoma, lung cancer, colon cancer, prostate cancer, or chronic myelogenous leukemia.

91. (New) The method of claim 89, wherein the cancer is acute myelogenous leukemia.

92. (New) The method of claim 89, wherein the compound has the following formula:

